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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION V

IN THE MATTER OF:

PENNWALT CORPORATION
4655 BIDDLE AVENUE
WYANDOTTE, MICHIGAN 48192

EPA ID. NO: MID 005 363 114

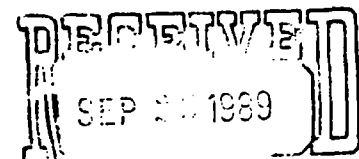
RESPONDENT.

Proceeding Under Section 3008(h)
of the Resource Conservation and
Recovery Act of 1976, as amended,
42 U.S.C. Section 6928(h)

ADMINISTRATIVE ORDER
ON CONSENT

U.S. EPA DOCKET NO.

V-W- 89 R- 45



REGIONAL HEARING CLERK
U.S. ENVIRONMENTAL
PROTECTION AGENCY

I. JURISDICTION

1. This ADMINISTRATIVE ORDER BY CONSENT (Consent Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency ("U.S. EPA") by Section 3008(h) of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act ("RCRA"), as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Section 6928(h). The authority vested in the Administrator has been delegated to the Regional Administrators by U.S. EPA Delegation Nos. 8-31 and 8-32 dated April 16, 1985, and May 15, 1986, respectively.

2. This Consent Order is issued to the Respondent, Pennwalt Corporation ("PENNWALT"), a corporation incorporated under the laws of the Commonwealth of Pennsylvania, the owner/

operator of a facility at 4655 Biddle Avenue, Wyandotte, Michigan ("the Facility"), and is based on an agreement reached between U.S. EPA and PENNWALT. Except as expressly provided otherwise herein, this Consent Order shall constitute neither evidence nor admission by any party of any fact, law or liability under statute. PENNWALT agrees to be bound by the terms and conditions of this Consent Order, and consents to and will not contest U.S. EPA's jurisdiction to issue or enforce this Consent Order. Further, PENNWALT will not contest U.S. EPA's jurisdiction to: compel compliance with this Consent Order in any subsequent enforcement proceedings, either administrative or judicial; require PENNWALT's full or interim compliance with the terms of this Consent Order; or impose sanctions for violations of this Consent Order.

II. PARTIES BOUND

1. This Consent Order shall apply to and be binding upon U.S. EPA and PENNWALT, including its officers, directors, and employees, in their capacities as representatives of PENNWALT, and its agents, successors and assigns.

2. No change in ownership or corporate or partnership status relating to any or all of its Wyandotte, Michigan facility, will in any way alter PENNWALT's responsibility under this Consent Order unless the Consent Order is amended, by mutual agreement,

to reflect any such alteration. PENNWALT shall not transfer any substantial amount of its assets to any other person or corporation without providing notice to U.S. EPA.

3. PENNWALT shall provide a copy of this Consent Order to all major contractors and laboratories retained to conduct or monitor any portion of the work performed pursuant to this Consent Order within one (1) week of the effective date of this Consent Order or date of such retention, and shall condition all such contracts on compliance with the terms of this Consent Order. All other persons retained to perform work under this Order shall be provided a copy of relevant portions of this Order prior to beginning any such work.

4. PENNWALT shall give notice of this Consent Order to any successor in interest prior to transfer of ownership or operation of the Facility and shall notify U.S. EPA consistent with 40 CFR Part 270.72(d).

5. The undersigned representative of each party certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Order and to execute and legally bind such party to this Order.

III. STATEMENT OF PURPOSE

1. In entering into this Consent Order, the mutual objectives of U.S. EPA and PENNWALT are:

A. For the East Plant, West Plant, and West Brine Field Area; to perform a review of previously completed environmental studies; performance by PENNWALT of additional environmental assessments as set forth in the RFI Scopes of Work which are incorporated into and made part of this Order as Attachments I, II and III, and to complete a RCRA Facility Investigation ("RFI") that fully describes the nature and extent of any release or the potential for future releases of hazardous wastes and/or hazardous constituents from the facility as identified in Attachments I, II and III;

B. Submission to U.S. EPA, by PENNWALT, of an RFI report that fully describes the results of all of the above activities; and, if U.S. EPA determines pursuant to Paragraph VIII of this Order that a Corrective Measures Study ("CMS") should be conducted;

C. Performance by PENNWALT of a CMS to identify and evaluate alternatives for the appropriate extent of corrective measures necessary to prevent or mitigate any

migration or release of hazardous wastes and/or hazardous constituents from the Facility as necessary to protect human health or the environment. These objectives shall be accomplished pursuant to the provisions set forth in this Consent Order and Attachments I, II, III and IV. These attachments are incorporated by reference as if fully set forth in this Consent Order.

IV. POTENTIALLY RESPONSIBLE PARTIES

PENNWALT, in good faith, has agreed to enter into this Consent Order under the authority of RCRA in order to, among other things, expedite the Study of the East Plant. U.S. EPA further recognizes that there are other persons not a party to this Consent Order that may be potentially responsible parties for conditions at certain portions of the facility. U.S. EPA reserves its right to identify, involve and pursue other potentially responsible parties.

V. U.S. EPA'S FINDINGS OF FACTS

1. PENNWALT Corporation ("PENNWALT") is a corporation, incorporated under the laws of the Commonwealth of Pennsylvania, doing business in the State of Michigan.

2. PENNWALT is a generator and an owner and/or operator of a hazardous waste management facility located at 4655 Biddle Avenue, Wyandotte, Michigan. The Facility consists of two plants known as the East Plant and West Plant plus property known as the West Brine Field Area. PENNWALT currently conducts manufacturing operations at the West Plant. Pressure Vessel Service, Inc. ("PVS") currently leases the East Plant from PENNWALT. PENNWALT engaged in the storage of hazardous waste in containers and tanks at the Facility subject to the interim status requirements promulgated pursuant to RCRA, 40 CFR Part 265 and Michigan Compiled Laws 299, parts 1 through 8.

3. East Plant. PENNWALT's holdings in the East Plant consist of parts of four parcels presently totalling approximately 90 acres, located between West Jefferson Avenue, the Detroit River, south of Wye Street and north of the Firestone properties. PENNWALT originally acquired parcel A-W-001 from Detroit River Land Company in 1898, parcel A-W-002 from Eureka Iron and Steel Works in 1899, parcel A-W-004 from Detroit Rock Salt Company in 1937, and parcel A-W-006 from the Village of Riverview in 1937. Historically, PENNWALT manufactured primarily inorganic chemicals at the East Plant, including caustic soda, chlorine gas, hydrogen, ferric chloride and chloroform. PENNWALT leased part of the East Plant known as the Halowax area to the Halowax Corporation of New York, Bakelite Corporation, Union Carbide and Carbon Corporation and Koppers Company, Inc., for the

production of chloronaphthalenes. Other areas of the East Plant were leased to companies including, but not limited to, Archer-Daniels-Midland, Detroit Edison Company, Jim O'Donnell, Inc., Taylor Chemical, Wall-Colmonoy Corp., Wall Gases, Inc., and Wyandotte Oil and Fat. Certain of these tenants manufactured, among other things, hydrogenated fish oil, carbon tetrachloride and carbon disulfide. Past chemical operations at the East Plant consisted of a gasification plant and the production of ammonia, ammonium chloride, hydrochloric acid, hydrogen peroxide, calcium hypochlorite, carbon tetrachloride, chlorinated benzenes and chlorinated naphthalenes. PENNWALT has no active manufacturing operations at the East Plant. PENNWALT currently leases a portion of the East Plant to PVS for the manufacture of ferric chloride and the distribution of inorganic industrial chemicals including hydrochloric acid and caustic soda.

4. West Plant. PENNWALT's holdings in the West Plant consist of parts of two parcels presently totaling approximately 53 acres located between West Jefferson Avenue and the railroad easements, south of Pennsylvania Avenue and north of Monguagon Creek. PENNWALT acquired parcel A-W-003 from Detroit River Land Company in 1908. PENNWALT currently manufactures organic industrial chemicals in its operations at the West Plant including lower alkyl and alkylalkanol amines, tert-nonyl polysulfide,

Endothall, sodium hydrosulfide, tert-amylphenols, thioureas, methane sulfonyl chloride and methane sulfonic acid.

5. West Brine Field Area. PENNWALT's holdings in the West Brine Field Area consist of part of one parcel which PENNWALT acquired from Sharples Chemicals, Inc., in 1955. The Brine Fields total approximately 92 acres located between the railroad easements and Clark Avenue and south of Pennsylvania Avenue. The majority of the West Brine Field Area lies north of Colvin Avenue; however, it includes two smaller parcels south of Colvin Avenue, on either side of McKinley Street.

6. PENNWALT owned and/or operated its Facility as a hazardous waste management facility on and after November 19, 1980, the applicable date which renders facilities subject to the interim status requirements under Sections 3004 and 3005 of RCRA, 42 U.S.C. Section 6924, and 6925, and Michigan Compiled Laws 299, parts 1 through 8.

7. Pursuant to section 3010 of RCRA, 42 U.S.C. Section 6930, PENNWALT notified U.S. EPA of its hazardous waste activity. In its notification dated August 13, 1980, respondent identified itself as a generator of hazardous waste and an owner/operator of a treatment, storage, and/or disposal facility. The August 13, 1980, notice is incorporated by reference into this Consent Order.

8. Pursuant to Section 3005 of RCRA, 42 U.S.C. Section 6925, PENNWALT submitted Part A of its permit application on November 13, 1980. PENNWALT submitted revisions to Part A of its permit application on August 13, 1982, and October 3, 1984. PENNWALT submitted Part B of its permit application on April 1, 1985. PENNWALT withdrew Part B of its permit application on April 16, 1987. The November 13, 1980, Part A application, its August 3, and October 3, 1984, revisions and the April 1, 1985, Part B application are incorporated by reference into this Consent Order.

9. Based upon the information submitted by the PENNWALT pursuant to the requirements of RCRA, the following hazardous wastes have been handled at the facility:

A. Hazardous wastes exhibiting the characteristics of ignitability, corrosivity, reactivity, and E.P. toxicity identified at 40 CFR Part 261.20 - 261.24 (D001, D002, D003 and D007);

B. Hazardous wastes from non-specific sources identified at 40 CFR Part 261.31;

C. Commercial chemical products, manufacturing chemical intermediates of off-specification commercial

chemical products or manufacturing chemical intermediates identified at 40 CFR Part 261.33(e);

D. Commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products identified at 40 CFR Part 261.33(f);

10. PENNWALT applied for interim status with respect to the following West Plant Units:

A. West Plant Drum Storage Area; and

B. West Plant Storage Tanks.

PENNWALT is implementing closure of the above units according to a closure plan approved by MDNR.

11. PENNWALT applied for interim status with respect to the following East Plant units:

A. East Plant Tanks 103 and 104;

B. East Plant Tanks 4 and 6A; and

C. East Plant Containment Slab.

Closure plans have been submitted and approved by U.S. EPA and closure has been completed and certified by PENNWALT for interim status units listed in B and C. The units identified in A are used by PVS for storage of spent pickle liquor used as a raw material in the manufacture of ferric chloride.

12. Other waste management areas/units and other potential source areas located at the Facility are identified and described in Table One to the RFI Scopes of Work attached to and incorporated into this Consent Order and include:

: East Plant:

- A. Tank 1;
- B. Anhydrous Ferric Chloride Container;
- C. PCB Storage Area;
- D. Asbestos Storage Area;
- E. Underground Injection Wells;
- F. NPDES Neutralization Tanks;
- G. NPDES Surface Impoundments;

- H. Former Landfill No. 5;
- I. Storage Tank (Reject Liquor Tank);
- J. Former Coal Pile Storage and/or Runoff Area;
- K. Ferric Chloride Processing Area;
- L. Former Lime Sludge Storage/Disposal Area;
- M. Halowax Area;
- N. Former Ammonium Chloride Plant;
- O. Former Synthetic HCl Plant;
- P. Buildings 35A and 38A;
- Q. Former Mond Gas Area;
- R. Former Taylor Chemical Area;
- S. Wyandotte Oil and Fat Plant; and
- T. Monitoring Well No. 12 Area.

West Plant:

- A. Tank 1224;
- B. NPDES Surface Impoundments;
- C. Former Landfill A;
- D. Former Landfill B;
- E. Former Landfill D;
- F. Former Surface Impoundments;
- G. Empty Drum Storage Area;
- H. Storage Tanks (Reject Liquor Tank,
Tanks 195.2.1 and 195.2.2);
- I. NPDES Neutralization Tank; and
- J. Mobil Tank Trailers

West Brine Field Area:

- A. Former Landfill No. 1;

B. Former Landfill No. 2;

C. Former Landfill No. 3; and

D. Former Landfill No. 4.

13. The properties adjoining the East Plant to the north and south are former industrial facilities, to the east of the East Plant is the Detroit River and to the west is the West Plant. Properties adjacent to the West Plant are a municipal wastewater treatment plant to the north, vacant PENNWALT property to the south, and the West Brine Field Area to the west. Residential areas abut the West Brine Field Area.

14. Spills have occurred at the Facility of sludges, off-specification production, acids, caustic solutions and wastewaters. These spills have occurred at the waste storage tanks, wastewater lagoons, and in the loading/unloading areas. Some of spills resulted in material flowing through surface drains or manholes, discharging to the Facility's NPDES outfalls.

15. In 1978, there was a release of dibutyl ziram from PENNWALT's settling lagoon system which resulted in a discharge to Monguagon Creek.

16. The Facility is generally flat with elevations at approximately 575 feet above mean sea level. Monguagon Creek runs through the southeast corner of the West Plant. The bedrock underlying the facility is the Dundee Limestone. Overlying the Dundee Limestone are glacial tills and lacustrine clays of approximately 40-60 feet thick. Surface soils on the East Plant are fill material, typically gray or brown gravelly, silty sands with occasional slag and brick refuse. The fill ranges from 2-10 feet thick. Underlying the fill material is a soft, dark brown to black peat approximately 0.5-1.0 feet thick. Groundwater occurs under unconfined conditions in the fill and upper flow zone, and in confined or semi-confined conditions in the deeper bedrock aquifer. Groundwater flow in the shallow zone is influenced by the surface-water hydraulics of the Great Lakes and the Detroit River.

17. In 1986, PENNWALT voluntarily performed an environmental assessment of the East Plant. The objective of the study was to define the impact of the past manufacturing processes on the soils and groundwater. The study was completed in two phases. The results of these studies were submitted by PENNWALT to U.S. EPA in a report titled "Environmental Study Pennwalt East Plant-Wyandotte, Michigan" dated January 1987, prepared by Roy F. Weston, Inc., PENNWALT's consultant. Results of the Phase I and Phase II studies indicate the presence of hazardous wastes and

hazardous constituents in the soils and groundwater within certain areas of the Facility.

18. Twelve groundwater monitoring wells were sampled and analyzed during the Phase I and II studies to determine whether hazardous wastes or hazardous constituents have entered the groundwater. Results from these studies indicate the presence of hazardous wastes or hazardous constituents in the groundwater.

19. The West Plant and the East Plant border industrial areas including the City of Wyandotte sewage treatment plant. The east side of the East Plant borders on the Detroit River which is used for recreational purposes. The West Brine Field Area borders on residential areas including three area schools within 1500 feet of the West Brine Field Area boundary. Homes in these areas are not on private wells but have a municipal water supply.

20. Releases to the groundwater from the Facility are likely to migrate eastward towards the Detroit River. During periods of high water levels in the Detroit River, the flow may be westward in the localized area of the river. Releases may also have an effect on Monguagon Creek which flows to the south and west and discharges to the Detroit River. Compounds identi-

fied in the soils at the Facility may pose a threat to human health or the environment.

VI. LEGAL EFFECT OF THIS DOCUMENT

PENNWALT admits those facts and conclusions of law and only those facts and conclusions of law necessary for U.S. EPA to have jurisdiction for the issuance of this order, furthermore, PENNWALT will not argue in any subsequent action it may bring contesting any decision made by, or order issued by, U.S. EPA that the jurisdiction of U.S. EPA is limited with regard to this Facility by the findings of facts or conclusions of law contained in this Consent Order. This admission is only for the purpose of this Consent Order. PENNWALT does not admit any of the factual or legal determinations made by U.S. EPA for any other purpose, and consistent with the terms of the Consent Order, reserves all other rights and defenses it may have regarding liability or responsibility for conditions at the Facility. PENNWALT has executed this Consent Order in good faith without trial or adjudication of any issue of fact or law. Accordingly, PENNWALT's execution of this Consent Order shall not be construed as an admission of any factual or legal determinations made by U.S. EPA, in any action not relating to this Order, nor shall it be construed as an admission of liability, and the Consent Order, any part thereof, and any findings of fact or conclusions of law

shall not be admissible in evidence except to enforce the terms of this Consent Order.

VII. U.S. EPA's CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set out above, and the administrative record, the Regional Administrator of EPA has made the following conclusions of law and determinations:

1. PENNWALT is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15).

2. PENNWALT is/was the owner or operator of a facility that has operated or is operating subject to Section 3005(e) of RCRA, 42 U.S.C. Section 6925(e).

3. Certain wastes and constituents thereof found at the Facility are hazardous wastes or hazardous constituents thereof as defined by Section 1004(5) of RCRA, 42 U.S.C. Section 6903(5). These are also hazardous wastes or hazardous constituents within the meaning of Section 3001 of RCRA, 42 U.S.C. Section 6921 and 40 CFR Part 261.

4. There is or has been a release of hazardous wastes and/or hazardous constituents into the environment from PENNWALT's Facility.

5. The actions required by this Consent Order are necessary to protect human health or the environment.

VIII. WORK TO BE PERFORMED

1. Pursuant to Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), PENNWALT agrees, and is hereby ordered, to perform the following acts in the manner and by the dates specified herein. All work undertaken pursuant to this Consent Order shall be performed in a manner consistent with this Consent Order, including its attachments, the RCRA Facility Investigation (RFI) and Corrective Measures Study Workplans, and all other workplans; RCRA and its substantive implementing regulations; and applicable U.S. EPA guidance documents. Furthermore, with respect to the Hallowax Area, all work performed hereunder shall be performed in accordance and consistent with the National Contingency Plan ("NCP"). 50 F.R. 47969 (November 20, 1985) or current regulations applicable at the time the Workplans are submitted. At the election of PENNWALT, any or all work performed under this Consent Order with respect to the remainder of the facility may be performed in accordance and consistent with the NCP. Relevant U.S. EPA guidance may include, but is not limited to, the "RCRA Facility Investigation (RFI) Guidance" (EPA 530/SW-87-001), "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document" (OSWER Directive 9950.1, September 1986), "Test Methods For Evaluating Solid Waste" (SW-846,

November 1986) and "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA 530/SW-85-031, July 1986). All additional guidance will be applicable only if it is in effect and specifically identified as applicable guidance by U.S. EPA's Project Coordinator at the commencement of the task to which it applies.

2. RCRA FACILITY INVESTIGATION (RFI). PENNWALT shall submit to U.S. EPA the following: (1) An East Plant RCRA Facility Investigation Workplan (RFI Workplan) pursuant to and within the schedule set forth in the East Plant Scope of Work, Attachment I; (2) A West Plant RFI Workplan pursuant to and within the schedule set forth in the West Plant Scope of Work, Attachment II; and (3) A West Brine Field Area RFI Workplan pursuant to and within the schedule set forth in the West Brine Field Area Scope of Work, Attachment III.

3. The RFI Workplans are subject to approval by U.S. EPA and shall be performed in a manner consistent with the RFI Scopes of Work, Attachments I, II and III. With respect to the Halowax Area, all work shall be performed consistent with the NCP. At the election of PENNWALT, any or all work performed under this Consent Order with respect to the remainder of the Facility may be performed in accordance and consistent with the NCP.

4. The RFI Workplans shall be designed to define the presence, magnitude, extent, direction, and rate of movement of any hazardous wastes or hazardous constituents within and, if necessary and in accordance with the Scopes of Work, beyond the Facility boundary. The RFI Workplans shall document the procedures PENNWALT shall use to conduct those investigations necessary to determine:

A. the presence or absence of hazardous wastes and hazardous constituents;

B. the nature and extent, and the rate of movement of contamination on and off of the Facility;

C. the possible routes of migration of hazardous wastes and hazardous constituents on and off the Facility including characterization of the geology and hydrology of the Facility which delineates possible routes of migration;

D. the extent and potential for migration of hazardous wastes and hazardous constituents through each of the environmental media;

E. corrective measure alternatives to remediate the observed and potential contamination;

F. the actual or potential receptors; and

G. the sources of contamination.

A schedule for commencement and completion of all activities shall be included in the RFI Workplans.

5. In accordance with the provisions of Attachments I, II and III, the RFI Workplans shall include:

A. Environmental Setting Plan;

B. Source Characterization Plan;

C. Contamination Characterization Plan;

D. Potential Receptor Identification Plan;

E. Project Management Plan;

F. Data Collection Quality Assurance Plan with supporting graphics and flow charts;

G. A specific Data Management Plan for each site/ source or interpretation with cross reference;

H. Health and Safety Plan;

I. A schedule for implementation of the Work Plan, including preparation and submission of preliminary and final reports to U.S. EPA; and,

J. A Community Relations Plan.

6. PENNWALT shall perform an investigation as called for in the approved workplans and shall submit draft and final RFI Reports.

7. As soon as possible after receipt of each final RFI Report, U.S. EPA shall make a preliminary, written determination as to the need for a CMS at the East Plant, the West Plant, and the West Brine Field Area, respectively identifying which areas of the facility require corrective action and shall submit a copy of the preliminary determination to PENNWALT. Within thirty (30) days of receipt of each preliminary determination, PENNWALT shall submit written comments on the preliminary determination to U.S. EPA. Within thirty (30) days of receipt of each preliminary determination, PENNWALT may also request a meeting with the project manager and the Section Chief of the RCRA Michigan/Wisconsin Technical Enforcement Section to discuss the preliminary determination and PENNWALT's comments thereon. PENNWALT shall have ten (10) days after the date of the meeting to submit

additional written comments on the preliminary determination to U.S. EPA. U.S. EPA shall, as soon thereafter as is practical, make a written determination as to the need for an East Plant CMS, West Plant CMS or West Brine Field CMS and shall submit a copy of the determination to PENNWALT.

8. If U.S. EPA determines that a CMS is not necessary at the facility, PENNWALT's obligations under this Consent Order shall cease with regard to that area.

9. If U.S. EPA determines that a CMS is necessary for the facility or any part thereof, and PENNWALT disagrees with that determination, PENNWALT shall, within ten (10) days, provide U.S. EPA with a written notice of dispute, setting forth PENNWALT's position and the basis for PENNWALT's position. If PENNWALT provides U.S. EPA with timely written notice of a dispute, it shall be resolved pursuant to the "MAJOR MATTER DISPUTE RESOLUTION" provisions in Paragraph XIX.

10. Within seven (7) calendar days of final approval/disapproval or modification by U.S. EPA of any Workplans, PENNWALT shall commence the work required by the Workplans submitted pursuant to the Scopes of Work contained in Attachments I, II, III and IV.

11. Beginning with the month following the effective date of this Consent Order, PENNWALT shall provide U.S. EPA with progress reports for each bi-monthly period by the fifteenth calendar day of the month following the completed reporting period. The progress reports shall conform to requirements in relevant Scopes of Work contained in Attachments I, II, III and IV.

12. PENNWALT shall provide draft and final RFI and CMS reports to U.S. EPA in accordance with the schedules contained in this Consent Order and its attachments.

13. U.S. EPA will review all draft and/or final workplans and reports submitted as required by this Order and will notify PENNWALT in writing of U.S. EPA's approval/disapproval or modification of any workplan, report, or any part thereof. In the event of any disapproval, U.S. EPA shall specify in writing the deficiencies and reasons for such disapproval. Within thirty (30) days of the receipt of U.S. EPA's disapproval of any report or workplan, and subject to the provisions of Paragraph XIX, PENNWALT shall amend and submit a revised report or workplan. Final, U.S. EPA approved workplans and reports shall be deemed incorporated into and a part of this Consent Order. This time period may be extended upon the mutual agreement of the parties.

14. PENNWALT shall hand deliver or send by express delivery or certified mail, return receipt requested, five (5) copies of all documents, including Workplans, preliminary and final reports, progress reports, and other correspondence to be submitted pursuant to this Consent Order to the Project Coordinator.

15. All work performed pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or geologist or equivalent with expertise in hazardous waste site cleanup. No later than ten (10) days after the effective date of this Consent Order, PENNWALT shall notify U.S. EPA in writing of the name, title, and qualifications of the engineer, the geologist or the equivalent. Within ten (10) days after PENNWALT retains any major contractor(s) to be used in carrying out the terms of this Consent Order PENNWALT shall notify U.S. EPA in writing of the name, title, and qualifications of the major contractor. PENNWALT shall notify U.S. EPA in writing of the identity of each subcontractor before the subcontractor begins work to carry out the terms of this Order.

16. U.S. EPA may determine that certain tasks, including investigatory work or engineering evaluation, are necessary in addition to the tasks and deliverables included in the RFI Workplans to achieve the purposes of this Consent Order. When new findings indicate that such additional work is necessary,

U.S. EPA shall request in writing that PENNWALT perform the additional work and shall specify the basis and reasons for U.S. EPA's determination that the additional work is necessary. Within twenty-one (21) days after the receipt of such request, PENNWALT shall have the opportunity to meet with U.S. EPA representatives, including the RCRA Enforcement Branch Manager, if requested, to discuss the additional work U.S. EPA has requested and to propose alternatives. Thereafter, subject to the provisions of Paragraph XIX, PENNWALT shall perform the additional work U.S. EPA has requested according to a U.S. EPA approved Workplan. All additional work performed by PENNWALT under this paragraph shall be performed in a manner consistent with this Consent Order.

IX. QUALITY ASSURANCE

1. Throughout all sample collections and analysis activities, PENNWALT shall use U.S. EPA approved quality assurance, quality control, and chain-of-custody procedures as specified in the approved Workplans and Scopes of Work. In addition, PENNWALT shall:

A. Ensure that laboratories used by PENNWALT for analyses perform such analyses according to the U.S. EPA methods included in "Test Methods for Evaluating Solid Waste (SW-846, November 1986)" or other methods deemed

satisfactory to U.S. EPA. If methods other than U.S. EPA methods are to be used, PENNWALT shall submit all protocols to be used for analyses to U.S. EPA for approval no later than sixty (60) days prior to the commencement of analyses;

B. Ensure that laboratories used by PENNWALT for analyses participate in a quality assurance/quality control program equivalent to that which is followed by U.S. EPA. As part of such a program, and upon request by U.S. EPA, such laboratories shall perform analyses of samples provided by U.S. EPA to demonstrate the quality of the analytical data; and,

C. Inform the U.S. EPA Project Coordinator in advance which laboratories will be used by PENNWALT and ensure that U.S. EPA personnel and U.S. EPA authorized representatives have reasonable access to the laboratories and personnel used for analyses.

X. PUBLIC COMMENT AND PARTICIPATION

1. Upon approval by U.S. EPA of a Corrective Measure Study Final Report, if required, U.S. EPA shall make both the RCRA Facility Investigation Final Report, or summary of the report, and the Corrective Measure Study Final Report, or summary

of the report, and a summary of U.S. EPA's proposed corrective measure available to the public for review and comment for at least thirty (30) days.

2. Following the public review and comment period, U.S. EPA shall notify PENNWALT of the corrective measure selected by U.S. EPA. If the Corrective Measure recommended in the Corrective Measures Study Final Report is not the corrective measure selected by U.S. EPA after consideration of public comments, U.S. EPA shall inform PENNWALT in writing of the reasons for such decision, and, subject to the provisions of Paragraph XIX, PENNWALT shall modify the RFI/CMS based upon public comment if directed to do so by U.S. EPA.

XI. CORRECTIVE MEASURES IMPLEMENTATION (CMI)

Upon U.S. EPA's selection of any corrective measure and after the opportunity for public comment and approval of any modification, if necessary, of U.S. EPA's proposed corrective measure(s), if PENNWALT has complied with the terms of this Consent Order, U.S. EPA shall provide a one hundred twenty (120) day period for negotiation of an administrative order on consent for implementation of the selected corrective measure.

XII. ON-SITE AND OFF-SITE ACCESS

1. U.S. EPA personnel and/or any U.S. EPA representatives are authorized, as necessary, to carry out the terms of this Consent Order, and upon presentation of credentials to PENNWALT to enter and freely move about the Facility during the effective dates of this Consent Order for the purposes of, inter alia: interviewing Facility personnel and contractors after forty-eight (48) hours notice to PENNWALT's Project Coordinator; inspecting records, operating logs, and contracts related to the Facility; reviewing the progress of PENNWALT in carrying out the terms of this Consent Order; conducting such tests, sampling or monitoring and using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to U.S. EPA by PENNWALT. PENNWALT shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Consent Order except for such matters that are protected as attorney work-product or by attorney-client privilege. PENNWALT and U.S. EPA shall comply with all approved health and safety plans.

2. Following any entry upon the Facility by U.S. EPA and/or any U.S. EPA representative and contractors, and within five (5) days after departing the Facility, U.S. EPA and/or any

U.S. EPA representative and contractors, shall provide PENNWALT with an itemized receipt for each document, copy of a document, photograph, copy of a photograph, sample, or other tangible thing to be taken from the Facility. U.S. EPA shall provide PENNWALT an opportunity to review and copy all documents and copies of documents taken from PENNWALT for purposes of determining whether some or all of the information contained therein is subject to a claim of confidentiality.

3. To the extent that work required by this Consent Order, or by any approved Workplan prepared pursuant hereto, must be done on property not owned or controlled by PENNWALT, PENNWALT shall use its best efforts to obtain site access agreements from the present owner(s) of such property within forty-five (45) days of receipt of U.S. EPA's written determination of the need for off-site access. Best efforts as used in this paragraph shall consist of a certified letter from PENNWALT to the present owners of such property requesting access agreements to permit PENNWALT and U.S. EPA and their authorized representatives to access such property. Any such access agreement shall be incorporated by reference into this Consent Order. In the event that agreements for access are not obtained within sixty (60) days of the date of receipt of U.S. EPA's written determination of the need for off-site investigation, PENNWALT shall, within seven (7) days, notify U.S. EPA in writing describing its efforts undertaken to obtain access and any reasons for its failure to obtain such agreements.

In the event U.S. EPA obtains access, PENNWALT shall undertake such work on such property as may be called for by the Workplans.

4. Nothing in this section limits or otherwise affects U.S. EPA's right of access and entry pursuant to applicable law, including RCRA and CERCLA.

XIII. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. PENNWALT shall submit to U.S. EPA the results of all sampling and/or tests or other data generated by, or on behalf of PENNWALT, in accordance with the requirements of this Consent Order and its attachments.

2. PENNWALT shall notify U.S. EPA at least seven (7) days before initiating any field activities, unless otherwise agreed to by the Project Coordinator, such as well drilling, installation of equipment, or sampling. At the request of U.S. EPA, PENNWALT shall provide or allow U.S. EPA or its authorized representative to take split samples of all samples collected by PENNWALT pursuant to this Consent Order. Similarly, at the request of PENNWALT, U.S. EPA shall allow PENNWALT or its authorized representatives to take split or duplicate samples of all samples collected by U.S. EPA under this Consent Order. U.S. EPA will notify PENNWALT at least five (5) days before conducting any sampling under this Consent Order.

3. PENNWALT may assert a confidentiality claim covering all or part of any information submitted to U.S. EPA pursuant to this Consent Order. Any assertion of confidentiality shall be adequately substantiated by PENNWALT when the assertion is made. Information determined to be confidential by U.S. EPA shall be afforded the protection specified in 40 CFR Part 2 Subpart B. If no such confidentiality claim accompanies the information when it is submitted to U.S. EPA, it may be made available to the public by U.S. EPA without further notice to PENNWALT. U.S. EPA shall provide written notice to PENNWALT of any determination regarding confidentiality. PENNWALT agrees not to assert any confidentiality claim with regard to any physical or analytical data.

XIV. RECORD PRESERVATION

PENNWALT agrees that it shall preserve, during the pendency of this Consent Order and for at least six (6) years after its termination, all data, records and documents in its possession or in the possession of its divisions, officers, directors, employees, agents, contractors, successors and assigns which relate in any way to this Consent Order or to hazardous waste management and/or disposal at the Facility which may affect the RFI/CMS, except for privileged documents. After six (6) years, PENNWALT shall make such records available to U.S. EPA for inspection or shall provide copies of any such records to U.S.

EPA. PENNWALT shall notify U.S. EPA thirty (30) days prior to the destruction of such records, and shall provide U.S. EPA with the opportunity to take possession of such records.

XV. PROJECT COORDINATOR

1. On or before the effective date of this Consent Order, U.S. EPA and PENNWALT shall each designate a Project Coordinator. PENNWALT shall notify U.S. EPA in writing of the Project Coordinator it has selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. The U.S. EPA Project Coordinator will be U.S. EPA's designated representative at the Facility. All communications between PENNWALT and U.S. EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators.

2. The parties agree to provide at least seven (7) days written notice prior to changing Project Coordinators.

3. If U.S. EPA determines that activities in compliance or noncompliance with this Consent Order, have caused or may cause a significant present threat to the public health or to the environment, U.S. EPA may order PENNWALT to stop further implementation of any RFI/CMS work for such period of time as may

be needed to abate such threat and/or to undertake any action which U.S. EPA determines is necessary to abate such threat. Within three (3) days of action by the Project Coordinator halting any portion of the work, U.S. EPA shall provide PENNWALT with the opportunity to meet the Project Coordinator's Supervisor at Region V (or discuss via telephone) to address and obtain a determination of the issues giving rise to such action.

4. The absence of the U.S. EPA Project Coordinator from the Facility shall not be cause for the stoppage of work.

XVI. NOTIFICATION

Unless otherwise specified, reports, correspondence, approvals, disapprovals, notices or other submissions relating to or required under this Consent Order shall be in writing and shall be sent to:

1. Five (5) copies of all documents to be submitted to U.S. EPA should be sent to:

United States Environmental
Protection Agency
Region V
RCRA Enforcement Branch (5HR-12)
230 S. Dearborn Street
Chicago, Illinois 60604
Attention: Peter Miller

2. Documents to be submitted to PENNWALT should be sent to:

Samuel B. Balamoun
Manager, Environmental
Engineering
Pennwalt Corporation
900 First Avenue
P.O. Box 1536
King of Prussia, PA
19406-0018

XVII. COMPUTATION OF TIME

1. In computing any period of time prescribed in this Consent Order, the day of the act from which the designated period of time begins shall not be included. The term "day" does not include any day designated as a holiday by the President or the Congress of the United States or by the State of Michigan.

2. Any time prescribed in this Consent Order may be enlarged pursuant to mutual agreement of the Parties.

XVIII. DELAY IN PERFORMANCE/STIPULATED PENALTIES

1. In order for PENNWALT to meet the requirements of this Order, it shall complete all activities under this Order or a plan approved under this Order or any matter under this Order in an acceptable manner and within the specified time schedules in, or approved under, this Order.

2. Unless there has been a written modification of compliance by U.S. EPA or excusable delay as defined under the "Force Majeure and Excusable Delay" provisions, if U.S. EPA has not waived any penalty and PENNWALT fails to meet any requirement set forth in this Consent Order, then PENNWALT shall pay stipulated penalties as follows:

A. For failure to commence work as prescribed in this Consent Order: \$1000 per day for the first to seventh day of delay and \$2,000 per day for each day of delay, or part thereof thereafter;

B. For failure to submit any preliminary and final reports, at the time required pursuant to this Consent Order: \$500 per day for the first to seventh day of delay and \$1,000 per day for each day of delay or part thereof, thereafter;

C. For failure to submit progress reports, at the time required pursuant to this Consent Order: \$250 per day for the first one to seven days of delay, \$500 per day for the eighth to the thirtieth day of delay and \$1,000 per day for each day of delay or part thereof, thereafter.

D. For failure to submit other deliverables required by this Consent Order: \$250 per day for the first one to seven days of delay, \$500 per day for the eighth to thirtieth day of delay and \$1,000 per day for each day of delay or part thereof, thereafter.

3. Under mutual agreement of the parties, any stipulated penalties that may be assessed under this section may be

waived. Stipulated penalties due hereunder shall be deemed waived if notice is not given by U.S. EPA within one year of receipt of notice that the deadline for an action has been missed or other violation giving rise to the penalty has occurred. This limitation shall not apply if PENNWALT has failed to report a missed deadline or other violation giving rise to a stipulated penalty.

4. All penalties shall begin to accrue on the day after the day that complete performance is due or a violation occurs, and shall continue to accrue through the final day or correction of noncompliance. PENNWALT shall not incur multiple stipulated penalties for a single activity which may be described in more than one of the three lettered sections in Subparagraph 1, above. Stipulated penalties due under this paragraph shall not exceed a total of \$25,000 per day.

5. All penalties owed to U.S. EPA under this Section shall be due within thirty (30) days of receipt of a notification of noncompliance and shall indicate the amount of penalties due. Interest shall begin to accrue on the unpaid balance at the end of the thirty-day period.

6. Payment of all penalties shall be made by certified or cashier's check payable to the Treasurer of the United States of America and shall be remitted to:

Regional Hearing Clerk
U.S. Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604

All payments shall reference the name of the Facility, PENNWALT's name and address, and the U.S. EPA docket number of this action. Copies of the transmittal of payment shall be sent simultaneously to the U.S. EPA Project Coordinator.

7. PENNWALT may dispute U.S. EPA's right to the stated amount of penalties by invoking the dispute resolution procedures under Paragraph XIX of this Consent Order. If PENNWALT does not prevail upon resolution of the dispute, U.S. EPA has the right to collect only such penalties as the resolution requires. If PENNWALT prevails upon resolution of the dispute, no penalties shall be payable.

8. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way PENNWALT's obligation to complete the performance required hereunder.

9. The stipulated penalties set forth in this Section do not preclude U.S. EPA from pursuing any other remedies or sanctions which may be available to U.S. EPA by reason of

PENNWALT's failure to comply with any of the requirements of this Consent Order.

10. Notwithstanding the stipulated penalties provisions of Subparagraph 1 of this paragraph, U.S. EPA may elect to assess civil penalties pursuant to Section 3008(c) of RCRA to enforce the provisions of this Consent Order provided that PENNWALT's total penalty or exposure for violations shall be limited as provided by Section 3008(c) of RCRA. However, U.S. EPA and the United States agree not to seek both stipulated penalties and Section 3008(c) civil penalties for the same violation.

11. Penalties for the untimely submission of draft, interim or preliminary plans or reports or for commencement of work shall be forgiven if PENNWALT submits the final plans or reports on time.

XIX. DISPUTE RESOLUTION

1. The parties shall use their best efforts, in good faith, to informally resolve all differences of opinion. A dispute shall be considered to have arisen when one party notifies the other party, in writing, that there is a dispute or as otherwise required in this Consent Order.

2. The written notice of dispute shall set forth the specific points of dispute, the party's position and the facts relating to the dispute. Within fifteen (15) days of receipt of such written notice of dispute, the recipient shall provide a written response setting forth its position and the facts in dispute. The period for informal negotiations shall not exceed thirty (30) business days from the time the dispute arises, unless it is extended by written agreement among the parties.

3. Except with respect to Disputed Major Matters as defined in Subparagraph 5 hereof, within ten (10) days of the date of the response to the petitioning party's written notice of dispute, U.S. EPA shall provide PENNWALT with a written statement of its decision which shall be binding upon all parties to this Consent Order.

4. With respect to Disputed Major Matters, as defined in Subparagraph 5 hereof, within ten (10) days of the response to the petitioning party's notice of dispute of a Disputed Major Matter, U.S. EPA shall provide a copy of all documents relating to the Disputed Major Matter to the Presiding Officer designated pursuant to Subparagraph 6 herein. At no time thereafter shall the Associate Division Director for RCRA, the Presiding Officer or any person who will advise the Presiding Officer in a decision on a Disputed Major Matter, discuss ex parte the merits of the proceeding with any interested party outside the Agency, with any

Agency staff member who performs a prosecutorial or investigative function in the proceeding or a factually related proceeding or with any representative of such person. The Presiding Officer shall schedule a hearing date which shall be within twenty-five (25) days of the response of the petitioning party's notice of dispute. At any time up to five (5) business days before the hearing, Respondent may, but is not required to, submit for inclusion in the administrative record information and arguments supporting Respondent's positions on the facts and law as each relates to the Disputed Major Matters in question. The hearing shall be limited to one day's duration at a time and location established by the Presiding Officer. The hearing shall be conducted in conformance with 40 CFR Part 24.11. The Presiding Officer shall prepare a recommended decision in accordance with the provisions of 40 CFR Part 24.12(a) & (b). The Presiding Officer shall present the recommended decision to the parties and to the Region V Associate Division Director for RCRA within ten (10) days of the date of the hearing. Within seven (7) days of receipt of the recommended decision, the parties may file comments on the recommended decision with the Region V Associate Division Director for RCRA. The recommended decision shall become the final determination of U.S. EPA unless within fifteen (15) days after receipt of the recommended decision the Associate Division Director for RCRA notifies PENNWALT that U.S. EPA intends to modify the recommended decision. The Associate Division Director for RCRA shall issue a written final

determination either adopting or modifying the recommended decision. The final determination must be based solely on the hearing record and any comments received from the parties during the applicable comment period. In the event the recommended decision is modified, the Associate Division Director for RCRA shall specify in the final determination which facts and findings are modified and the reasons for such modifications.

5. Disputed Major Matters shall only include the determination that corrective measures are necessary, selection of the corrective measures and related issues, pursuant to Paragraph X, the determination of the need for and extent of an off-site RFI, the determination of the need for and the extent of additional work (involving areas of the facility not identified in Column D of Table I to the SOWs), and disputes concerning a demand for stipulated penalties.

6. The Presiding Officer shall be appointed in accordance with 40 CFR Part 24.09 and shall be a U.S. EPA attorney.

7. With respect to any disputed matter, if U.S. EPA concurs with the position of the Respondents, the Respondents shall be so notified in writing and the Consent Order shall be modified to include any necessary extensions of time or variances of work. If U.S. EPA does not concur with the position of the

Respondents, U.S. EPA shall resolve the dispute based upon and consistent with the terms of this Consent Order, and with respect to Disputed Major Matters, consistent with the terms of Subparagraph 4 of this paragraph, and shall provide written notification of such resolution to the Respondents.

8. The pendency of dispute resolution set forth in this paragraph shall not affect the time period for completion of any work and/or obligations to be performed under this Consent Order, except as to work and/or obligations which are the matter of, or affected by, the dispute. The time period shall be extended for completion of any work and/or obligations to be performed under this Consent Order, pursuant to Paragraph XXVII, for a period of time not to exceed the delay U.S. EPA determines is attributable to resolution of the dispute. Elements of work and/or obligations not affected by the dispute shall be completed in accordance with the schedule included in the Scopes of Work, Attachments I, II, III and IV, to this Order.

9. Upon resolution of any dispute, whether informally or by using the procedures in this paragraph, any additions or modifications required as a result of such dispute resolution shall immediately be incorporated, if necessary, into the affected Workplan and into this Consent Order. The Respondents shall proceed with all remaining work according to the modified Workplan.

XX. FORCE MAJEURE AND EXCUSABLE DELAY

1. PENNWALT shall perform the requirements of this Consent Order within the time limits set forth herein unless the performance is prevented or delayed solely by events which constitute a force majeure. PENNWALT shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not foreseeable and beyond the control of PENNWALT, including its consultants and contractors, which could not be overcome by due diligence and which delays or prevents performance by a date required by this Consent Order. Such events do not include unanticipated or increased costs of performance, changed economic circumstances, normal precipitation events, or failure to obtain Federal, state or local permits. Delays in performance caused by the failure of the State of Michigan, U.S. EPA, or other governmental agencies to timely approve, disapprove, revise, or comment on submittals as required under this Consent Order or to issue permits required as a prerequisite to the execution of work under this Consent Order shall constitute a "force majeure."

2. PENNWALT must notify U.S. EPA in writing within seven (7) days after it becomes aware of events which PENNWALT knows or should know constitute a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken

or to be taken to minimize the delay, and an estimated time table for implementation of these measures. Failure to comply with the notice provision of this section shall be grounds for U.S. EPA to deny PENNWALT an extension of time for performance.

3. If U.S. EPA determines that a delay is or was caused by a force majeure, the Parties shall modify the relevant Workplan to provide such additional time as may be necessary to allow the completion of the specific shares of work and/or any succeeding phase of the work affected by and attributable to such delay with each additional time not to exceed the actual duration of the delay resulting from force majeure event. This shall be accomplished through an amendment to this Consent Order pursuant to Section XXVII. Such an extension does not alter the schedule of performance or completion of other tasks required by any Workplan unless these are also specifically altered by amendment of the Consent Order or incorporated Workplan. In the event that U.S. EPA and PENNWALT cannot agree that any delay has been or will be caused by a force majeure or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with the Dispute Resolution provisions of Section XIX of this Consent Order.

XXI. COVENANT NOT TO SUE

1. Upon successful completion of all requirements of this Consent Order, U.S. EPA covenants not to sue or bring any civil, judicial or administrative action against Respondent for any RFI/CMS or RI/FS obligations with respect to the Facility except as otherwise provided herein. U.S. EPA and Respondent intend that such covenant not to sue shall apply solely to liability for work satisfactorily performed pursuant to the terms of this Consent Order, and shall not be a release of any other claim which U.S. EPA may have. Except with respect to the work, this Consent Order does not release Respondent from responsibility or liability for any other response actions at the facility or any other responsibilities or liabilities under RCRA, CERCLA, or any other federal or State law; nor does this Consent Order release Respondent from any responsibility or liability it may have to maintain the facility in an environmentally safe manner during the pendency of and following the termination and satisfaction of this Consent Order.

2. Notwithstanding any other provision of this Consent Order, U.S. EPA reserves the right to: (1) institute proceedings in a new action or to issue an Order, pursuant to Section 106 of CERCLA, 42 U.S.C. Section 9606, or Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), seeking to compel PENNWALT to perform any additional RFI/CMS or RI/FS at the Facility necessitated by a

release from the Facility; (2) institute proceedings in a new action, pursuant to Section 107 of CERCLA, 42 U.S.C. Section 9607, to seek reimbursement to the United States for its response costs for any additional response action undertaken by U.S. EPA under CERCLA relating to the Facility, if:

(a) conditions at the Facility, previously unknown to U.S. EPA, are discovered after the entry of this Consent Order, or

(b) information is received after the entry of this Consent Order,

and these previously unknown conditions or this information indicates that there has been a release of hazardous waste for which corrective action is necessary to protect human health or the environment.

3. U.S. EPA is specifically without authority to waive any natural resource claims which the United States may have under Sections 107(a)(4), and 107(f) of CERCLA. It is not the purpose of this Consent Order nor the intention of the Parties to release any other persons or entities not parties to this Consent Order from any claims or liabilities which they may have.

XXII. CONTRIBUTION PROTECTION

The Parties acknowledge and agree that the commitment by PENNWALT to perform an RFI/CMS pursuant to this Consent Order represents a good faith settlement and compromise of a disputed claim and the settlement represents a fair, reasonable, and equitable resolution of this cause. The Consent Order provides PENNWALT with contribution protection as provided in Section 113(f) of the Superfund Amendments and Reauthorization Act of 1986.

XXIII. RESERVATION OF RIGHTS

1. U.S. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by PENNWALT pursuant to this Order and to request, pursuant to Paragraph VIII(16), that PENNWALT perform tasks in addition to those stated in the Workplan.

2. U.S. EPA, except as otherwise provided herein, hereby reserves all of its statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to PENNWALT's failure to comply with any of the requirements of this Consent Order, including, without limitation the assessment of penalties under Section 3008(h)(2) of RCRA, 42 U.S.C. Section 6928(h)(2). Except as otherwise provided herein,

this Consent Order shall not be construed as a covenant not to sue, release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which U.S. EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law enforcement authority of the United States.

3. Compliance by PENNWALT with the terms of this Consent Order shall not relieve PENNWALT of its obligations to comply with RCRA or any other applicable local, state or Federal laws and regulations.

4. Except as provided herein, the entry of this Consent Order and PENNWALT's consent to comply shall not limit or otherwise preclude the Agency from taking additional enforcement action pursuant to Section 3008(h) should the Agency determine that such actions are warranted.

5. This Consent Order is not intended to be nor shall it be construed as a permit. This Consent Order does not relieve PENNWALT of any obligation to obtain and comply with any local, State or Federal permits.

6. U.S. EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions as it deems necessary to protect public health and the

environment. Absent an immediate hazard, U.S. EPA will not perform work consented to herein if Respondent is performing said work in a timely and satisfactory manner. In any event, U.S. EPA reserves its right to seek reimbursement from PENNWALT for such additional costs incurred by the United States. Notwithstanding compliance with the terms of this Consent Order, except as provided herein, PENNWALT is not released from liability, if any, for the costs of any response actions taken by U.S. EPA.

7. Except as expressly stated herein, nothing in this Consent Order or a subsequent submittal, attachment, or report which is incorporated into this Consent Order shall constitute, or be construed as, a release of any claim or admission of any fact by PENNWALT.

XXIV. OTHER CLAIMS

Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation not a signatory to this Consent Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XXV. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, State, and Federal laws and regulations. PENNWALT shall obtain or cause its representative to obtain all permits and approvals necessary under such laws and regulations.

XXVI. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

PENNWALT agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents and employees, from any and all claims or causes of action arising from or on account of acts or omissions of PENNWALT or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Consent Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of PENNWALT or the United States under their various contracts.

XXVII. SUBSEQUENT MODIFICATION

1. This Consent Order may only be amended by mutual agreement of U.S. EPA and PENNWALT. Such amendments shall be in writing, shall be signed by both parties, shall have as their

effective date the date on which they are signed by both parties, and shall be incorporated into this Consent Order.

2. Any reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon written approval of U.S. EPA, incorporated into this Consent Order.

3. No informal advice, guidance, suggestions, or comments by U.S. EPA regarding reports, plans, specifications, schedules, and any other writing submitted by PENNWALT will be construed as relieving PENNWALT of its obligation to obtain written approval, if and when required by this Consent Order.

XXVIII. CONSISTENCY WITH NATIONAL CONTINGENCY PLAN

The United States agrees that with respect to the Halowax Area all work performed hereunder, if satisfactorily performed, shall be consistent with the provisions of the National Contingency Plan promulgated pursuant to Section 205 of CERCLA, 42 U.S.C. Section 9605.

XXIX. SEVERABILITY

If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstances is held by any judicial or administrative authority

to be invalid, the application of such provisions to other parties or circumstances and the remainder of the Consent Order shall remain in force and shall not be affected thereby.

XXX. TERMINATION AND SATISFACTION

This Consent Order shall terminate upon full satisfaction of the provisions of the Order. The provisions of this Consent Order shall be deemed satisfied upon PENNWALT's receipt of written notice from U.S. EPA, that the terms of this

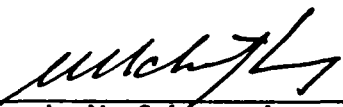
Consent Order, including any additional tasks determined by U.S. EPA to be required pursuant to this Consent Order, have been satisfactorily completed.

XXIX. EFFECTIVE DATE

The effective date of this Consent Order shall be the date on which it is signed by the Regional Administrator, Region V, U.S. EPA. Because this Order was entered with the consent of both parties, PENNWALT waives its right to request a public hearing with respect to this Consent Order pursuant to Section 3008(b) of RCRA, 42 U.S.C. Section 6928(b).

IT IS SO AGREED:

Pennwalt Corporation

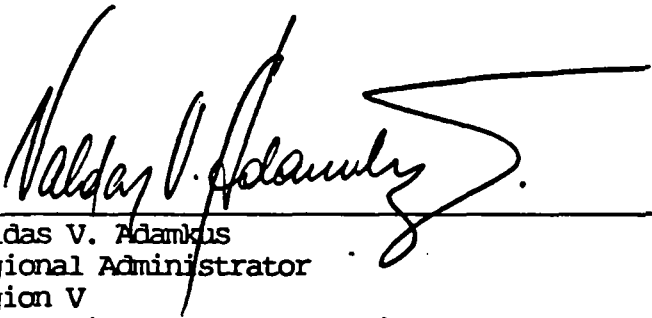
By  Date 7-17-, 1989
Martin M. Schwartzberg
Senior Vice President-Chemicals

U.S. Environmental Protection Agency

By  Date 9-19, 1989
Basil G. Constantelos, Director
Waste Management Division

IT BEING SO AGREED, IT IS ORDERED THIS 21st DAY OF September, 1989

BY


Valdas V. Adamkus
Regional Administrator
Region V
U.S. Environmental Protection Agency

IN THE MATTER OF:

PENNWALT CORPORATION
EPA ID NO: MID 005 363 114